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(21) International Application Number: PCT/IE98/00030 (22) International Filing Date: 22 April 1998 (22.04.98) (71) Applicants (for all designated States except US): ENTERPRISE IRELAND trading as BIORESEARCH IRELAND [IE/IE]; Glasnevin, Dublin 9 (IE). UNIVERSITY COLLEGE CORK [IE/IE]; College Road, Cork (IE). (72) Inventors; and (75) Inventors/Applicants (for US only): McCARTHY, Thomas, Valentine [IE/IE]; Vista Villa, Montenotte, Cork (IE). VAUGHAN, Patrick, Martin [IE/IE]; 175 West Avenue, Parkgate, Frankfield, Cork (IE). (74) Agent: ANNE RYAN & CO.; 60 Northumberland Road, Ballsbridge, Dublin 4 (IE).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: A METHOD FOR THE CHARACTERISATION OF NUCLEIC ACID MOLECULES INVOLVING GENERATION OF EXTENDIBLE UPSTREAM DNA FRAGMENTS RESULTING FROM THE CLEAVAGE OF NUCLEIC ACID AT AN ABASIC SITE (57) Abstract A method for characterising nucleic acid molecules comprises the steps of: i) introducing a modified base which is a substrate for a DNA glycosylase into a DNA molecule; ii) excising the modified base by means of said DNA glycosylase so as to generate an abasic site; iii) cleaving the DNA at the abasic site so as to generate an upstream DNA fragment that can be extended; and iv) incubating the extendible upstream fragment in the presence of an enzyme, for example a polymerase or a ligase, allowing for extension thereof and a template nucleic acid and analysing the resultant fragment(s). The invention provides a novel, versatile and simple method using the above-mentioned extendible upstream DNA fragments which allows characterisation of nucleic acids and which has advantages over existing methods. One of the most important uses (but not the only use) of the method according to the invention is to scan or check a fragment of DNA (target nucleic acid) for the presence or absence of a mutation.		